Electronic Version
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Claims

[c1] 1. A method for providing a virtual exit port for a robotic data storage library comprising:
providing a robotic data storage library comprising:
a plurality of storage locations, each capable of holding at least one data
storage element,
a data transfer interface for receiving a data storage element and
establishing a communication path with a data storage element so that data can
be transferred between the data storage element and a host computer,
an actual exit port for transferring a data storage element out of said library, and
a transport unit for moving a data storage element between a location within said library and said actual exit port; and
defining at least one of said plurality of storage locations as a virtual exit port prior to receiving a command to export a data storage element from said library.

[c2] 2. A method, as claimed in claim 1, further comprising:

moving a data storage element from one of said plurality of storage locations to said virtual exit port.

[c3] 3. A method, as claimed in claim 1, further comprising: moving a data storage element from said virtual exit port to said actual exit port.

[c4] 4. A method, as claimed in claim 1, further comprising: moving a data storage element directly from one of said plurality of storage locations not defined as a virtual exit port to said actual exit port.

[c5] 5. A method, as claimed in claim 1, wherein said virtual exit port comprises at least one storage location in a preferred location.

[c6] 6. A method, as claimed in claim 5, wherein said preferred location comprises at least one storage location in a magazine.

[c7] 7. A method, as claimed in claim 5, wherein said preferred location comprises a plurality of contiguous storage locations.

[c8] 8. A method, as claimed in claim 5, wherein said preferred location comprises a storage location located nearer to said actual exit port than at least one other storage location.

[c9] 9. A method, as claimed in claim 8, wherein said preferred location comprises a storage location located substantially adjacent to said actual exit port.

[c10] 10. A method, as claimed in claim 1, wherein said step of defining is performed via a control panel.

[c11] 11. A method, as claimed in claim 1, wherein said step of defining is performed via a host computer.

[c12] 12. A method, as claimed in claim 1, wherein said step of defining is performed via a controller of said library.

[c13] 13. A method, as claimed in claim 1, wherein said step of defining comprises defining at least one default storage location as said virtual exit port.

[c14] 14. A method, as claimed in claim 1, wherein said plurality of storage locations comprises a first partition and a second partition.

[c15] 15. A method, as claimed in claim 14, wherein said virtual exit port comprises a first storage location located within said first partition.

[c16] 16. A method, as claimed in claim 15, wherein said virtual exit port further comprise a second storage location located within said second partition.

[c17] 17. A method, as claimed in claim 14, wherein said virtual exit port comprises a storage location independent of said first partition and said second partition.

[c18] 18. A method for providing a virtual exit port for a robotic data storage library comprising:
providing a robotic data storage library comprising:
a plurality of storage locations, each capable of holding at least one data
storage element,
a data transfer interface for receiving a data storage element and
establishing a communication path with a data storage element so that data can
be transferred between the data storage element and a host computer,
an actual exit port for transferring a data storage element out of said library, and
a transport unit for moving a data storage element between a location within said library and said actual exit port;
defining at least one of said plurality of storage locations as a virtual exit port prior to receiving a command to export a data storage element from said library;
first moving a data storage element from one of said plurality of storage locations to said virtual exit port; and

second moving a data storage element from said virtual exit port to said actual exit port.

[c19] 19. A method, as claimed in claim 18, further comprising:
mapping said virtual exit port as an actual exit port to a host computer such that the host computer perceives said virtual exit port as an actual exit port of said library.

[c20] 20. A method, as claimed in claim 19, wherein said mapping step precedes said first moving step.

[c21] 21. A method, as claimed in claim 18, further comprising:
moving a data storage element directly from one of said plurality of storage locations not defined as a virtual exit port to said actual exit port.

[c22] 22. A method, as claimed in claim 21, further comprising:
providing an updated inventory to a host computer.

[c23] 23. A method as claimed in claim 22, wherein said providing step follows said step of moving a data storage element directly.

[c24] 24. A method, as claimed in claim 18, further comprising:

providing an updated inventory to a host computer.

[c25] 25. A method, as claimed in claim 24, wherein said providing step follows said second moving step.

[c26] 26. A robotic data storage library comprising:
a plurality of storage locations, each capable of holding at least one data storage element;
a data transfer interface for receiving a data storage element and establishing a communication path with a data storage element so that data can be transferred between the data storage element and a host computer;
an actual exit port for transferring a data storage element out of the library;
a transport unit for moving a data storage element between a location of the library and said actual exit port; and
a controller for receiving a command to export a data storage element from the library and for causing at least one of said storage locations to be defined as a virtual exit port prior to receiving a command to export a data storage element from the library.

[c27] 27. A library, as claimed in claim 26, wherein said controller is further adapted to direct said transport unit to move a data storage element from one of said plurality of storage locations to said virtual exit port.

[c28] 28. A library, as claimed in claim 26, wherein said controller is further adapted to direct said transport unit to move a data storage element from said virtual exit port to said actual exit port.

[c29] 29. A library, as claimed in claim 26, wherein said controller further comprises a user interface for receiving a command to move a data storage element from said virtual exit port to said actual exit port.

[c30] 30. A library, as claimed in claim 26, wherein said controller is further adapted to direct said transport unit to move a data storage element directly from one of said plurality of storage locations to said actual exit port.

[c31] 31. A library, as claimed in claim 26, wherein said controller further comprises a user interface for receiving a command to move a data storage element directly from one of said plurality of storage locations to said actual exit port.

[c32] 32. A library, as claimed in claim 26, wherein said virtual exit port comprises at least one storage location located in a preferred location.

[c33] 33. A library, as claimed in claim 32, wherein said preferred location comprises at least one storage location in

a magazine.

[c34] 34. A library, as claimed in claim 32, wherein said preferred location comprises a plurality of contiguous storage locations.

[c35] 35. A library, as claimed in claim 32, wherein said preferred location comprises at least one storage location located substantially adjacent to said actual exit port.

[c36] 36. A library, as claimed in claim 26, wherein said plurality of storage locations comprises a first partition and a second partition.

[c37] 37. A library, as claimed in claim 36, wherein said controller is further adapted to cause at least one of said plurality of storage locations to be defined as a first virtual exit port for said first partition and at least one of said plurality of storage locations to be defined as a second virtual exit port for said second partition.

[c38] 38. A library, as claimed in claim 26, wherein said controller is further adapted to map said virtual exit port to a host computer such that said host computer perceives said virtual exit port as an actual exit port.

[c39] 39. A method for transferring a data storage element between an actual port of a robotic data storage library

and another location within the robotic data storage library comprising:

providing a robotic data storage library comprising:

a plurality of storage locations, each capable of holding at least one data

storage element,

a data transfer interface for receiving a data storage element and

establishing a communication path with a data storage element so that data can

be transferred between the data storage element and a host computer,

an actual port for transferring a data storage element between said library and an external environment, and

a transport unit for moving a data storage element between a location within said library and said actual port;

defining at least one of said plurality of storage locations as a virtual port;

mapping said virtual port to a host computer such that the host computer perceives said virtual port to be an actual port of said library; and

moving a data storage element directly between said actual port and a location of said library not defined as said virtual port.

[c40] 40. A method, as claimed in claim 39, wherein said ac-

tual port comprises an actual entry port for transferring a data storage element into said library.

[c41] 41. A method, as claimed in claim 39, wherein said actual port comprises an actual exit port for transferring a data storage element out of said library.

[c42] 42. A method, as claimed in claim 39, wherein said actual port comprises an actual entry/exit port for transferring a data storage element into and out of said library.

[c43] 43. A method, as claimed in claim 39, further comprising:
providing an updated inventory to a host computer.